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LEGO System `Rock Raiders'

Target Audience & Age Range Considerations

The following ideas and concepts have been produced with respect to the given brief and that although the range will be marketed at young boys aged between 7 to 10, the expected audience for a game of this genre may expand to older players aged 9 or 10+, to be decided after focus testing. Violence is to be kept to a minimum and that scenes of death are to be avoided, keeping in line with LEGO brand guidelines regarding portrayal and use of characters and models.

Target Platforms

The game is currently being designed for the most common hardware platforms, which will initially be;

Sony Playstation
PC CD-ROM (3d Accelerator card support)

The Story and Objective

DEEP SPACE. SOMETIME IN THE NEAR FUTURE.

Spiral Galaxies, giant gas clouds and billions of stars fill the endless void. Meteorites pass by, spinning across space. A feint, unnatural humming noise can be heard, occasionally there is a more intense burst of sound. The camera locks on to a large meteorite as it hurtles past and tracks it. A vast metallic hull fills the scene and the meteorite diminishes to nothing until it bursts in a green pool of energy close to the ship, identifying the source of the intense sound.
More meteorites fly by, some colliding with the ship's shields. At the point of contact the shields ripple with green pools of energy. The camera fixes on a large window in the control tower as the enormous vessel lumbers towards us. The ship continues to get closer until we fly straight into the control room. Inside, the walls are covered with hi-tech control panels, monitors and equipment. Amongst all the flashing lights are six crew of the LMS-Explorer:

The six crew are specialists in their fields of expertise, they include a geologist, a pilot, a vehicle driver, a sailor an engineer and the captain. As they skillfully manoeuvre their way through the meteors, their sensors pick up an unusual space time disturbance pattern exerting a tremendous gravitational pull. The captain orders his crew to divert all power to the forward thrusters to try and break free. But taking away the power from the shields means that they will not be able to stop the meteors hitting the ship. It's a gamble they must take as they are being sucked towards the black hole, now looming up on their Visual Display unit at the front of the Ship's bridge. It seems to be working and the great lumbering hull is managing to fight against the powerful gravitational force when suddenly the sensors pick up an even bigger problem. A huge meteor is also caught in the grip of the gravitational pull and it starts to swirl in an arc, as if it was water going down a plug hole.

The captain knows what is about to happen and orders for the power to be transferred back to the main shields, but it is too late, the shields take time to power up and the meteor has already gone through the outer shields perimeter and the inner shields will never be able to withstand the impact of such a large meteor.

Crash ! The meteor smashes a huge hole in the side of the ship sending the crew flying through the air, the bridge is momentarily plunged into darkness and then the flashing red emergency lights automatically come on, the klaxon horn is sounding the alarm, the crew have to act fast to try and save the ship. As they scramble to their positions, the crew realize that the impact has damaged the power lines leading from the energy crystals, which, having undergone tremendous energy stress are almost completely exhausted.

The biggest problem is that without the energy crystals to power the cargo ship, the gravitational pull of the black hole is now sucking them into itself. As the crew spiral through the black hole, they find themselves emerging into a whole new galaxy.

The captain steers the ship towards the nearest planet, hoping that the energy crystals will hold out until they can reach the planet's orbit. Using all his skill he is able to maintain a safe orbit just above the planet's atmosphere. Time is of the essence, they must make repairs to the ship's hull and more importantly replenish

their stock of energy crystals, if they are to have any chance of returning through the black hole and completing their mission. A geological survey of the planet reveals seams of energy crystals and ore, but the sensors cannot be accurate as they are operating on very low power. The only way to extract the valuable ore and energy crystals is to send the Rock Raider team down and to locate and mine these precious minerals as soon as possible. As the crew tele-port down to the planet to mine, they do realize how perilous a task this may be……

OVERALL GAME FLOW

As the Rock Raiders begin mining on the planet, they realize that they do not have enough ore or energy crystals to manufacture and power their tunneling craft to reach the rich ore and crystal reserves at it's core. Docs, the geologist estimates that there will be 5 major stages in their journey to the centre of the planet. Each stage has just enough ore and energy crystals deposits to keep them operational for the next stage. However, Docs also estimates that the ore and energy crystals are in small deposits spread across various sites at each stage.

It is imperative that the team reach and collect the huge ore and energy crystals deposits at the planet's core as these are necessary to repair and power the LMS -Explorer safely back home.

To complete each stage of the journey, the player must take control of the Rock Raiders team in this 3D strategy game and help them in their struggle against the elements. Fight through lava, ice, rock and rivers, avoiding the attentions of the menacing Rock Monster hot in Pursuit! Have you got what it takes to collect the precious energy crystals and escape from the underground world?

Overview

Overview: The Game Genre

The game itself will be a resource based strategy game, similar in many respects to popular titles such as `Conquest Earth: First Encounter, `Command and Conquer: Red Alert' and `Dark Reign' and 'Dungeon Keeper'

A number of similarities between the LEGO System `Rock Raiders' model range and this genre of resource strategy games exist. For example;

- **Mining and management of the resources produced** is an integral part of games of this genre. Example model references- The `Granite Grinder' style digger and the small rock transporter.

- **The idea of having a home base**. Games of this genre always have a starting base construction of one form or another. This was always the core of operations which is the last-stand building essential to the functioning of all others. Once it is destroyed then the level is lost. E.g. `Conquest Earth' had its power station, `Command and Conquer: Red Alert' had its construction yard. Example model reference: The `Rock Raider HQ' LEGO model.

- **The idea of collecting and storing raw materials** with the intention of financial reward or construction usage. In `Command and Conquer, Tiberium was harvested and stored, then used for financial means. In `Conquest Earth', the Jovian forces mined Silicon for transportation back to Jupiter. The LEGO `Rock Raiders' model range has a variety of diggers and transportation vehicles used in the collection of crystals that provide power. The collection of LEGO Ore is required to create new vehicles and machinery.

We propose to ensure originality and variety from the crowd in a several ways. The `Rock Raiders' game will be different from other games of the genre in the fact that the player will be able to elect to manually control a unit, bringing arcade-style elements into a pre-dominantly strategical game, where they have been neglected in the past. This will attempt to bridge the gap in age groups and target audience, with both strategy minded players and arcade game players being able to enjoy the game. Flying a hoverboard around or driving a huge excavator, ploughing through piles of rubble, bouncing around on the undulating terrain under DIRECT player control will prove very satisfying.

The other way the game will differ from the mainstream resource management game is in the fact that the mini-figures have minor levels of self-intelligence and don't <u>HAVE</u> to be told to do things, as they do in games such as `Command and Conquer'. For example, if you excavate an area of rock in order to release the crystals stored within, it would prove repetitive to the player if he/she had to ;

1. First excavate with a Granite Grinder,
2. Find nearby Mini-figures or transportation vehicles,
3. Move Mini-figures or transportation vehicles over the top of the mined minerals,
4. Find a nearby refinery,
5. Tell Mini-figures or transportation vehicles to deliver the load

Instead, we propose to let Mini-figures do the collecting and storing automatically, in a similar way to the way the `Imps' do in Bullfrog's `Dungeon Keeper'. Here they perform these otherwise tedious tasks such as mineral collection and tunnel re-enforcement automatically.

Similar Titles in the Genre

`Conquest Earth: First Encounter'
`Command and Conquer'
`Command and Conquer: Red Alert'
`Dark Colony'
`Dark Reign'
`Total Annihilation'.
'Dungeon Keeper'

Overview: The Game Engine

The game will be set in a 3D polygon based environment, where the game will be played from an isometric viewpoint as seen in games such as `Dungeon Keeper' and `Diablo'. Where it differs in that both `Dungeon Keeper' and `Diablo' are essentially flat games played solely on a 2d plane, `Rock Raiders' will have undulating underground terrain and be visually stimulating and due to this unique terrain, will have very enjoyable `arcade' elements when manually controlling the equipment.

Example of game viewpoint

This 3d polygonal based viewpoint has been selected over the 2d sprite based engine traditionally used in games of this genre, for a number of reasons;

The target machine, the Sony Playstation, has been designed purely with 3d in mind and has excellent capabilities such as

 Lighting Effects

- Dynamic lighting can be incorporated to enhance the look of the game.
- Fog and other transparent effects will be used to further enhance the look of the game.
- Animating textures would allow us to show water / lava effects to greater effect.

Sound.

- We will be using XM music to enhance the atmospheric feel of the game.
- We may also use XA audio to further enhance the feel of the game.
- If possible we could also incorporate Surround Sound into the XM music player if the libraries allow this to be done. (There was mention that this would be the case at the last DevCon.)

A 3d engine will allow the gameplayer to rotate the view around to suit his/her needs, without the need to falsely remove near-side walls that would otherwise block views, as seen in `Diablo'. We feel that this freedom will allow us to create a more realistic playing environment without having to make compromises to graphical or playability content.

The game's levels are based underground, keeping to the LEGO story behind the `Rock Raiders' concept.

Each level of the game will comprise of combinations of:

- **Huge caverns** littered with hazards for the unwary player. Stalactites hang precariously from the roof- ready to fall to the ground should a vibration caused by an explosion occur. Large Stalagmites stand proud in the solid cave floor blocking exits and hiding secrets behind and on top of them.
- **Smaller caves** and pot holes, ripe for exploration. Only the most curious player will be able to discover the secrets hidden in the tightest crevice!
- **Tunnels** linking caverns together, forming labyrinth-like mazes.
- **Looser rock /soil walls** which can be excavated to travel from one cavern to another.
- Natural obstructions such as;
  - **Lava flows**, hazardous to anything that comes into contact with them. Clever players will find ways to bridge seemingly impossible rivers of lava in order to reach bonus crystals.
  - **Underground rivers**. These vary from being slightly stirring still-waters to raging torrents that only the most clever of players can successfully overcome.
  - **Underground lakes and pools**.
  - **Ice**. This will need to be scanned carefully in order to find thin sections that may break if cracked by a nearby explosion. The large drilling unit feels right at home on the ice with it's huge heavy-grip tyres.

<u>Overview: Game Interface</u>

Every strategy/management type game currently on the market uses a plethora of sometimes confusing icons both contained within the desktop and sub-menus.

The interface that we envisage will allow an inexperienced player to pick up and play the game without the need to keep referring to the manual to see what an icon means.

As the user-interface is where the player will control most of the game, it is one of the first indicators that the player has regarding the playability of the game. It must therefore allow the player to quickly get to grips with the control method without having to refer to the manual.

The main interface will consist of three main areas (as shown below);

Fig 1.1 Example of game view and interface. Note: Design and colour subject to change and are merely representative of ideas

1. The Geological section.

This is the area where the radar and map screen are shown and is located in the upper right hand corner of the screen. This will give information to the player according to the level of geologist available. It will also show the areas you have explored and all the tunnels you have drilled. A level one geological center will allow the player's units to be displayed, plus any number of enemies that your units can see within their light range. Level two will show the location of rock monsters within a certain range of the geological building and all cavern areas on the current map, even if they have not been discovered. No detailed information will be given as to what is in them, only their location and shape. Level three will display all units on the map, including Rock monsters, cloaked Scavengers and buildings.

The radar screen is a powerful asset at higher levels, but may also hinder the player. It drains a large amount of energy and is also very susceptible to radar interference as the player digs deeper into the planet. Natural disasters like lightning storms on the surface will also cause interference with radar systems and also teleporting devices, making the player rely more on his own abilities as the game progresses.

2. The Main options section.
This section consists of two main areas;
2.1 Icons. A total of four icons are included here. These should cover all the options the player will need, and allow for a minimum amount of use of the side bar.

- **OPTIONS**. This icon will allow the user to access game options, such as sound and graphics, load, save and quit, and also game speed.
-
- **BUILD OPTIONS**. This icon will provide a short cut to quick build options, such as refineries, crystal stores, radar towers, teleport stations etc.
- **TELEPORT CONTROL**. This icon will allow the player to select a unit and teleport it to any of the available teleporter pads on that level.

All icons will also include a windows 'tool tip'. If the pointer is left over an icon for a short period of time, a small text message will inform the player of the icons function.

An extra option is also included on the icon bar. This is a large siren. This will act with the text bar below and give the player visual warnings of in game events, such as attacking Rock monsters, completion of a unit being built or an approaching earthquake. Once the siren has alerted the player to an event, clicking on it will act as an automatic 'go-to' command, centering the view port on the appropriate area

2.2 The Main Information Area.
This area is set aside for displaying the information after an icon has been selected. It will display the available units if build is selected, with all unavailable units ghosted out.

The area that slides out will also be transparent to make sure that a minimum amount of the viewing area is obscured during play. It will also be used to display messages from the surface to help the player, or to inform of any change of objectives during a mission.

3. The Score and text panel.
This small area on the bottom left of the screen will always be visible and will inform the player of all ore and power crystals accumulated over a level . Next to these scores will be a text box. This will allow for messages about in game events and allow players with no sound cards, or hearing disabilities to play the game without disadvantage. If either of the above icons are selected a priorities list will be displayed for the mini-figures. By dragging and dropping the icons (dig ore, carry crystals and reinforce walls.) the player can affect the behavior of the mini-figures with no previous specific orders.

General Overview of Interface.

The interface will only be partly visible on screen during play. Both the radar and options sections will be located off screen during start of play and will be accessible by the user pressing the appropriate button (see controls section), This

will allow the player the maximum amount of playing area for viewing the game in. As a lot of the options will be accessible directly from the joypad buttons, the player may only need to have the radar out and choose to keep the options panel out of the way to maximize his playing area.

Once a unit has been selected the on screen pointer will become 'Context sensitive'. A good example of this is once a mini-figure is selected. If the pointer goes over any crystals it will change to the appropriate 'pick-up' icon, and if it goes over drillable rock will change to a drill icon.

If using the PSX mouse, this idea will also extend to buildings. Selecting a building will bring up a quick and concise set of icons, right clicking may repair it and left click up-grade it. All other options for buildings, such as what units it may produce will need to be shown on the side options panel.

Game Features: The Play Area

Underground Caverns and Caves

The player will start in a small cave or cavern, the majority of which can be initially traversed by even a small mini-figure. Areas of rougher ground, lava or water will need the creation of vehicles specialised to combat these hazards. Creation of digging vehicles and transportation craft will allow access to other areas, rewards and ultimately, the level objective.

There will be other caverns and caves scattered liberally through the current level play area. Digging between these subterranean worlds forms tunnels.

We will design each cavern with a set number of exits and tunnels pre-defined, as seen in Magic Carpet 2, but there will also be loose areas and harder rock that the player can explore in order to locate crystals or dig through trying to locate new caverns.

Underground Tunnels

The subterranean tunnels are the areas between caverns, some of which are already constructed on the level when you start, others will have to be made by digging equipment. This will be presented graphically with the use of detailed textures and reactive lighting effects and will accurately reflect the colour schemes and textures of the actual LEGO models and box art work wherever possible.

Tunnels will sometimes need to be made in complex paths in order to overcome an obstacle.

Example. There may be a large deposit of crystals on a level. This will be shown on the geological plan available either at your information/survey building or by use of a mini-figure trained in the skill of geology. However, there is a thick band of very, hard rock separating them from the player, who will then have several options:
1. Tunnel around it through softer soil,
2. Blast through it, using the dynamite sticks provided by mini-figures trained in explosives usage,
3. Create a heavy drilling machine and bore through it.

The player will be able to lay traps and seal off tunnels through the use of these explosives. The course of tunnels will also have to be plotted around natural obstructions such as lava flows, underground rivers and solid seams of rock. This takes game play ideas from tried and tested classics such as `Boulderdash', `Lemmings', `Dig-Dug' and more recently `Dungeon Keeper'.

Hard Rock, Loose Rock and Soil

These elements can all be tunneled through and excavated. Rock forms will be shown as graphically different from other types, by use of colour and detail.

Rivers

These waters hold many perils for the unwary player wishing to cross or explore. They will be varied in ferocity from torrential flood-waters to more placid

canal-like bodies. The player will have to assess the strength and hazards present before selecting the appropriate craft, or try and find natural bridges.

Lakes

These bodies of water sometimes cover large areas of the level and will have to be mapped out carefully before real work starts. Exploratory and reconnaissance water craft such as the small catamaran will feel right at home here.

The `Dark'

Areas in `Rock Raiders' that are uncharted or have not been encountered by the player are generally speaking `in the dark'. This is of course with the exception of levels where illuminative lava flows are present. Ice caves are also self lighting to some small degree.

The start area will appear as a real underground mine. The walls will be supported by steel floor-roof supports and with small lamps incorporated within it.

Should your power level fall to dangerous levels, functionality will be lost. Individual buildings and units may be turned off to save power, while you use more essential vehicles and constructions to quickly build it up again.

The order of lighting importance can be changed from within the main control panel. The items which can be placed in order of importance are as follows;

- Buildings and Larger, more power consumptive units
- Smaller units and buildings
- Lighting in outer lying tunnels,
- Tunnels nearer to bases,
- Outer lying caves
- Nearer caves.

By using this order, the player will always be able to keep playing should power levels become low and lighting fail. Infinite battery power is available and will be used in backup, so complete helplessness never sets in. Units will just operate slowly and less efficiently and lighting will be very dim.

Ice Caverns

Ice caverns are one of the `Rock Monsters' favourite places. They are cool and quiet, away from the hubbub of the various lava pits and underground rivers that usually criss-cross this underground world. The player has to carefully negotiate these slippery areas and take care not to disturb the `Rock Monsters' slumber.

Game Features; Example Elements

Lava Flows

Pockets of lava are displayed on the geological map and are often surrounded by a crust of cooler hard rock. They can be released into tunnel systems by means of blasting or deliberate drilling. The flow will engulf anything in its path but gradually the head of the flow will cool and form a hard pumice-stone plug. This again will be possible to destroy and restart the flow.

Occupied vehicles that get engulfed in lava will lose their use and become destroyed. If the vehicle's destruction is imminent, the mini-figure will teleport out back to the surface and will not be available again until the following mission and his vehicle will also teleport away.

Flash Floods

Flash floods can be instigated in much the same way as lava flows. However, they do have some basic differences. For example, any mini-figures or vehicles will not be disposed of in a flood as they would be in a lava flow, but will be carried along the tunnels until the water dissipates.

Water flows can also be triggered to cool larger flows of lava that would otherwise be impassable. It will be up to the player as to how the tunnels are created in order that their own forces are not swept into a lava flow or pool!

Game Features: Hazards and Foes

Rock Monsters

These huge creatures lie dormant within the walls of the caverns and tunnels that the miners inhabit. This will be shown by having a slightly different looking rock wall, or a couple of eyes that appear briefly every few seconds. In earlier levels they remain in this state until their slumber is disturbed, whereby they will then attack. In later levels they will roam around trying to steal the players crystals, which they then devour.

In earlier levels, they can be scared off temporarily by throwing a small stick of dynamite. The flash of light and bang scares them. Also, picking up smaller items in the caverns such as small rocks and throwing them would also stun the Rock monsters for a short while.

They can be damaged by collapsing tunnel walls and will quickly give up the chase. The player can choose to sacrifice one of the valuable power crystals if there seems to be no obvious escape. Satisfied with the meal, the monster returns to his sleep until hungry again or disturbed.

If there is absolutely no way for a mini-figure to escape and he is certain to be grabbed by the rock monster, he will teleport back to base.

Lurkers

These cumbersome creatures stalk the subterranean world looking for trouble. They will go looking around trying to steal available crystals which they then just break because they're mean. If they encounter a mini-figure, they will attempt to hurt him, but they are also frightened of vehicles.

Their thick skin allows them to withstand shots from `Freeze Rays'. `Pusher' guns will push them back however.

Scabby Scavengers

These wild-looking creatures are generally timid, are afraid of bright light and have very poor vision. They are found in the cooler regions of the underground world and in small numbers, a will run away and hide at the mere smell of a mini-figure or vehicle. However, once in packs, they become braver and more ferocious and will vandalise any vehicles they find.

Slimy Slugs

To mini-figures, these gelatinous creatures are nothing but a nuisance that causes them to slip when stepped upon. To vehicles, they are parasites. They crawl around on the floor of caves, anywhere where the air is moist such as areas near to water. They crawl around feeding upon the materials that vehicles are made from. Once they smell a vehicle nearby, they will slowly crawl onto it and cling on, corroding and draining the vehicles power.

There are two ways to remove these pests. They are;

1. Directly shooting them off with any type of utensil. Great care has to be taken with aiming however as misplaced shots will harm the vehicle itself, rather than the `Slimy Slug'.

The Rock Raider Mini-figures: Overview

General abilities and Manual Control

By default, all mini-figures in `Rock Raiders' will be unskilled. That is not to say that they are useless or have no purpose. It merely means that they are a `jack-of-all-trades' and capable of most tasks required with moderate competence. They have the following abilities

- **Walk over most rock types and ice**. (Manually controlling mini-figures is done by use of the joypad direction keys when one is selected. Running is achieved by holding in a given direction)
- **Mine loose rock**,
-
- **Re-enforce and light tunnels and caverns**,
- **Pick up** and transfer mined crystals directly back to the refinement station.
- **Use hand held utensils**, such as `Pusher' guns and `Freezer Rays'. (Used in manual control mode by pressing the action button. Weapon fired in direction of the screen pointer)
-
- **Pilot helicopters**,
- **Drive excavating and transport vehicles,**
- **Skipper the hovercraft's.**

Once a mini-figure/craft has been selected, manual control of him can be performed by use of the direction arrow keys. An action key will be definable for firing etc. Once selected, a mini-figure or vehicle can be instructed to perform a task such as `dig here' by clicking over the target area. The cursor will change to reflect the action appropriate to the vehicle/mini-figure and the location of the pointer.

For example, with a mini-figure selected, when you move the pointer over an unoccupied hoverboard vehicle, the pointer will change to one that indicates `get into' or `climb on'.

Another example is when you have one of large storage trucks selected, by moving the mouse pointer over some mined rocks the cursor will change to one which indicates `collect'  or `pick-up' etc.

Priority list

In LEGO `Rock Raiders', any mini-figures not performing an instructed task will go to the nearest needed task and perform it. These tasks comprise of 2 simple jobs, which are;

- **The Reinforcement of walls and Lighting**. Important obviously to prevent cave-ins. This is best left as top priority until you fall very short of funds and need to teleport new equipment quickly, or your power level is falling dangerously low.
- **Collection of Power Crystals.** When made top priority, mini-figures will collect Power Crystals and take them either to the nearest refinery.

The order of the tasks shown above will set like that by default, with tunnel reinforcement/lighting top priority. Changing this priority is simply performed by

clicking on the priority list icons on the main game panel. They will be diagonally stacked, clearly showing what task is of most importance. Clicking on one of the icons then pushes that task to the top of the list.

Hand Held Utensils

We propose to have three basic levels of weaponry to equip the team with. Purchasing upgraded team armaments during the level is the way to access the more powerful varieties. These are;

**The `Pusher' Gun**. The default `company issue' weapon available in `Rock Raiders' will be a `Pusher' gun. A hit from this gun merely pushes the receiver back. After receiving a coupler of shots from these relatively ineffective weapons, smaller inhabitants of the moon will give up the chase and run off. `Rock Monsters' will need substantially more persuading to leave and go back to their slumber.

Freezer Gun. The second level armament mini-figures can be equipped with are `Freeze rays'. The effect of which will temporarily render a foe frozen in ice. After the ice melts, the assailant will continue his pursuit. After being frozen 3 times, most indigenous creatures will run off shivering and flapping their arms. Again, rock monsters need more hits before they will break off an attack.

Dynamite. As mentioned previously, LEGO mini-figures trained in the skill of demolition will carry single sticks of dynamite as opposed to the standard issue weaponry. This dynamite has a 5 second timer if dropped right next to where the demolition mini-figure is standing. If a target or place further away is clicked, then the dynamite is thrown and will explode upon impact. If the player decides to take manual control of a mini-figure trained in the skill of demolition, the longer the player holds the action button determines how far the dynamite is thrown.

Training Mini-figures to fill Special Roles

As stated earlier, Mini-figures start with no special abilities and will be able to perform most tasks assigned to them. The player will be able to train them in a number of skills which will enhance the performance of vehicles or tasks they control.

The Rock Raider team train the Mini-figures in;

- **Pilot Aircraft**. Training a mini-figure in the skill of flying will increase the helicopters speed, route-finding ability and take off and landing speed. No negative effects. This mini-figure is distinguishable because of his goggles.

- **Geological Surveys**. Training a mini-figure in the skill of geology an scanning gives him the ability to use the mobile scanner. A level-1 Geo-info building allows this scanner to see simple geological information such as where seams of crystals lie, where underground rivers and lakes are and the like. Upgrades of this building also upgrade the geologist's hand held scanner to being able to locate `Rock Monsters' and other creatures.

- **Driving**. Mini-figures trained in driving control heir vehicles with increased speed. The vehicles effectiveness also increases. For example, the larger drilling machine bores through rocks 30% faster than it would do had an unskilled mini-figure been in control.

- **Sailing**. Training a mini-figure in the skill of aquatic competence increases the ability of water based craft such as the scout catamaran (who will move 30%) or the large hovercraft, who's speed and storage capacity will increase.

- **Demolition Expert**. Training a mini-figure in the art of explosives increases his ability slightly in all vehicles and changes his weapon from the company standard issue one. He now uses sticks of dynamite. These are not powerful enough to blow big holes in hard rock, but are enough to scare rock monsters in running away and can be used in smaller scale gem excavation when more powerful vehicles are further afield and would not prove cost effective in slowly coming a long way back just to extract a couple of crystals.

- **Constructions Engineer.** Mini-figures trained in this skill have the ability to build constructions at twice the speed of a normal unskilled one. When a building has been selected for construction, these will be the first mini-figures to come and run over and start work.

Constructing buildings: Overview

In LEGO `Rock Raiders', building constructions will be an important and integral part of the game, and skills in resource management will become necessary in order to allow the player to freely construct buildings when needed. Unlike teleportation of new mini-figures or the creation of new vehicles, which will both be transported down from the cargo, buildings and constructions are put together on the cave floor.

A construction is simply performed by selecting the building type from the constructions tab on the game panel. The cursor will then change to one that represents the floor area of the selected building. Clicking on the cave floor then places the foundations of the building down. The mini-figures have to mark the boundaries of the foundations with 'men at work hazard boards' which they collect from the storage building and once all the construction boards are in place an animation shows the building being constructed. Whilst this is taking place, the required amount of ore and power is subtracted from the players reserves.

Should the area selected to place the building be one that is not suitable, the cursor will change to a red one. It will also change to indicate that the area that the cursor is being moved to is too far away from another building and therefore cannot receive the necessary power to function properly.

Your Base

Base units are the grey plinth like LEGO models that buildings in `Rock Raiders' will be placed upon to keep in line with the `Rock Raiders' product range.

The buildings need power, so the player will have to plan ahead and decide whether to build constructions away from existing bases, This will have the following consequences;

- It will draw power from the nearest base unit, rendering the building on such a base shorter of power than they normally would be. This has the knock on effect of making them less efficient.
- Buildings have a much shorter power distribution range than bases. This means that the player can build other constructions much further away from a base than an individual building.

Any construction built away from one of these base units, will have a single small grey plinth built underneath it. Again this keeps in line with the product range.

There are a number of ways in which bases and other constructions can be harmed. Some examples of these are;

- **The Rock Monsters (and other such creatures) can actually damage the Rock Raider HQ by pounding on it with their huge stone hands**. This will cause various negatives such as reducing the ability to extract crystals from within rocks, reducing construction speed or ability etc. This option would necessitate the need to repair your base, which will of course cost crystals and ore.
- **The `Rock Monsters' steal crystals from your stores** and continually gorge themselves upon the booty until they are full, or are repelled.
- Smaller indigenous creatures such as the scabby scavengers will creep around and **steal ore from your stores**.

- **Natural hazards** such as rock falls, tremors, floods.
- **Heat damage.** Placing a base too near to a heat source such as a lava pit or flow will mean power crystals get used up much more quickly due to them having to air condition buildings.

At the start of any given level, the player will have the facilities of a simple base at his/her disposal. For example, the first level will have a base unit stacked with 1 refinery (taking up 2 ground blocks) and a storage dome each for Ore and Crystals. Also present are a stage-1 barrack construction and 5 unskilled mini-figures. Construction Types: Buildings

Following is a list of the various construction types we intend to include in the LEGO `Rock Raiders' game, starting with buildings. (Please note that the cost figures are representative and are designed to show relationships in cost between structures and units. They are subject to change and should not be taken as decided amounts.)

Construction Type: Buildings

Base Unit.

(More detailed explanation available in `*your base'* section.) This most basic but essential construction consists of a first-stage power

	Level1	Level 2	Level 3
Cost	750	-	-
Ability	-	-	-
Power Consumption	Self sufficient.	-	-
Power Distribution Range	Large	-	-
Base slots required	-	-	-

Refinery.

This expensive construction is essential to your quest in `Rock Raiders' as it is the building which refines raw ore and crystals into usable elements. As per the LEGO model, it consists of two parts. One is the crane and moving side that lifts materials from the cave floor and places them in the other part. This other part is the extraction, purification and cleaning section which processes freshly mined ore and crystals.

The refinery will have two entrances for the resources to be placed.

- The first method is for mini-figures. They will place anything they are carrying into a trough at the front of the refinery, where it will then enter and be processed.
- The second is for trucks and other load-carrying vehicles. They will park alongside the refinery where the crane will then grab their load and place it in the processing section.

	Level1	Level 2	Level 3
Cost	500	+100	+200
Ability (Speed of operation)	1x	1.5x	2x
Power Consumption	4 crystals/hr	+1 crystal/hr	+2 crystal/hr
Power Distribution Range	Small	Small	Medium

Barrack.

These constructions are necessary for the living quarters of your mini-figures. A level 1 barrack is needed before 5 workers can successfully be supported. It provides oxygen for the mini-figures to breathe. It is also the location of training facilities and is where both skilled and unskilled mini-figures can train up and specialise.

	Level1	Level 2	Level 3

Cost	300	+100	+150
Ability (Capacity)	5 mini-figures	10 mini-figures	15 mini-figures
Power Consumption	2 crystals/hr	+1 crystal/hr	+1 crystal/hr
Power Distribution Range	Small	Small	Small
Base slots required	1	-	-

Information/Geological Center.

This essential construction enables the player to gather information on a number of levels. Essentially its functions are twofold.

- Firstly, in providing a **level-wide scanning ability**. In the underground worlds that the player finds himself in it is vitally important that they know something of the initial layout. They have to know the quickest route to the richest source of crystals, otherwise they will waste time and energy unnecessarily. There is also the danger of becoming lost in the myriad of tunnels that can be created! Going back to your Rock Raider HQ and using the geological survey building will provide you with information such as this. The scanner will also display the nature of the surrounding strata and also any pockets of water or lava. The player will then be able to avoid traps and also build safe new constructions far more easily.

-
- Secondly, it provides **general game information** regarding detailed crystal level information, ore levels and advice on courses of action where appropriate.

	Level1	Level 2	Level 3
Cost	400	+150	+00
Ability (Scan detail)	General mineral info.	More detailed rock info.	High detail info & detect life.
Power Consumption	3 crystals/hr	+1 crystal/hr	+1 crystal/hr
Power Distribution Range	Small	Small	Small
Base slots required	1	-	-

Repair Center

In LEGO `Rock Raiders', vehicles can be harmed by driving closely to lava, by being hit by Rock Monsters, hit by falling rocks etc. This leads up to the fact that they will need to have somewhere where the energy lost can be replenished and damage caused, repaired. This construction is needed before any repairs to vehicles are possible. Repairs to the said damaged vehicles costs ore and energy replenishment costs power crystals.

Further gameplay elements come in here with the player deciding whether to repair a damaged vehicle immediately, or hold on a while and try and make-do until repairs can be carried out without causing too much of a drain on resources.

Some smaller craft, such as hoverboards will not prove cost effective if they are repaired and are best used up until their lifespan has expired. The player will learn techniques such as these through play and will learn how to manage his resources in the most efficient manner possible.

- A stage one repair facility merely does just that. It will only perform repairs and replenish lost energy.

-
- Upgrading it to a stage two repair facility increases its ability, the player can slightly increase the speed of the vehicle being repaired.

-
- A stage 3 repair station can be very advanced and can alter many attributes of vehicles brought there. For example, paying for extra grip will give the vehicle bigger tyres with more visible deeper tread. Increasing the engine ability will physically increase its size and will allow either more speed or will allow digging vehicles to tunnel through rocks more quickly.

	Level1	Level 2	Level 3
Cost	400	+150	+250
Ability	Repairs and replenishes vehicles.	Repairs faster and allow minor vehicle speed increases.	V.Fast repairs and has ability to alter vehicle attributes.
Power Consumption	4 crystals/hr	+2 crystals /hr	+3 crystals/hr
Power Distribution Range	Small	Small	Medium
Base slots required	1	-	+1

Ore Storage Dome

This facility is used in the storing of mined Ore. The ore mined has to pass through the refinery before it can be stored here and its value be utilised. This process takes a relatively short period of time, which can of course be reduced by upgrading your refinery facilities. Upgrading these storage domes merely increases their capacity.

These storage domes are, however, vulnerable to attack and will usually become the first point of attack from a smaller native creature such as a `Lurker' or `Scabby Scavenger' wishing to plunder the players reserves.

	Level1	Level 2	Level 3
Cost	250	+100	+100
Ability (Storage capacity)	10 nuggets	15 nuggets	20 nuggets
Power Consumption	2 crystals/hr	+1 crystal /hr	+1 crystal/hr
Power Distribution Range	Small	Small	Small
Base slots required	1	-	-

Crystal Storage Dome

This construction is used to store Energy crystals mined by drilling and boring vehicles. Again, the same principles apply to this facility as to the Ore storage dome.

Rock monsters will usually make these Crystal storage domes their focal point of attack however, as they wish to gorge themselves on the Crystals stored within. Hence this is a very valuable building and should be protected at all costs.

This installation also follows the same upgrade pattern as the ore storage facilities in so much as upgrading them merely increases their storage capacity.

	Level1	Level 2	Level 3
Cost	250	+100	+100
Ability (Storage capacity)	15 crystals	20 crystals	25 crystals
Power Consumption	2 crystals/hr	+1 crystal /hr	+1 crystal/hr
Power Distribution Range	Small	Small	Small
Base slots required	1	-	-

Dock

This water based construction is necessary before any water based craft can be used. It does not need a `base' construction before it can be placed and once operational, it is the place all water based craft are beamed down to, and also becomes their repair center.

It is vulnerable to attack from all native creatures.

Upgrades of this allow larger water based vehicles to be beamed down, and will increase repair times of the smaller ones.

	Level1	Level 2	Level 3
Cost	400	+100	+100
Ability1 (Craft transp.) Ability 2 (Repair)	Small vehic. 1x speed	Med vehic. 1.5x speed	Large vehic. 2x speed
Power Consumption	4 crystals/hr	+1 crystal /hr	+1 crystal/hr
Power Distribution Range	Small	Small	Small
Base slots required	-	-	-

Construction Types: Defence Stations

Small Guard Turret

This defensive building is used to protect your facilities from attack. It uses the same weapon type upgrades as the mini-figures do but the effect is increased twofold. I.e. Turrets equipped with `Pusher Guns', rock monsters and other creatures twice as far away as mini-figure versions do, freezes them for twice as long.

This turret building operates on a charge-and-fire basis whereby it first charged up, then fires high powered shots singly.

	Level1	Level 2	Level 3
Cost	250	+100	+100
Ability (Ammo power)	`Pusher Gun'	`Freeze Ray'	`Teleporter'
Power Consumption	2 crystals/hr	+1 crystal /hr	+1 crystal/hr
Power Distribution Range	Small	Small	Small
Base slots required	1	-	-

Semi-Automatic Guard Turret

This is a more advanced version of the smaller guard turret that uses more power, costs more and takes longer to construct. Its advantage is that it fires multiple shots in bursts, where once it has fired a volley of shots, it pauses momentarily to cool down.

	Level1	Level 2	Level 3
Cost	350	+100	+100
Ability (Ammo power)	`Pusher Gun'	`Freeze Ray'	`Teleporter'
Power Consumption	4 crystals/hr	+1 crystal /hr	+1 crystal/hr
Power Distribution Range	Small	Small	Small
Base slots required	1	-	-

Electric Beam Barricades.

These will be teleported down to the planet for the mini-figures to carry and place down in the desired location. These electric beam barricades sends beams between themselves and nearby buildings. Any Rockmonsters caught in it's path are scared away forever. Any unit coming into contact with these beams will be buzzed with electricity and will not be able to pass through them. Vehicles however can withstand brief contact with the beam, but any contact with it longer than a second or so and the vehicle will be teleported away to the surface.

The beam can be broken by smashing one of the posts that actually power it. These have to be guarded as closely as possible.

	Level1	Level 2	Level 3

Cost	75 each	-	-
Ability (Stopping power)	Teleports or scares most creatures away.	-	-
Power Consumption	3 crystals/hr	-	-

Vehicles Available: Overview

Attributes of the vehicles available in `Rock Raiders' will be enhanced by using a skilled mini-figure to control them with. The enhancement brought about varies from skill to skill and vehicle to vehicle, but generally speaking, enhances a vehicles performance by some 30%.

The creation of vehicles is performed by clicking the creation tab in the game control panel, then clicking on one of the vehicle icons available to the player at the time. Vehicles may be unavailable for a number of reasons, such as;

- The vehicles is not available yet. Initially, only certain vehicles will be available for creation. Vehicles will be introduced periodically in the earlier levels, allowing the player to familiarise him/herself with them.
- The level brief does not allow creation of certain vehicles. Some levels in the game will break from `the norm' and the player will be given different objectives that will not require the use of drilling equipment for example.
- The player does not have sufficient ore reserves to create certain vehicles.

Any vehicles on the cave floor that become unoccupied due to its driver being teleported out or occupied in another task, will remain available for any mini-figure to control. This means that should the player teleport new staff, they may immediately go to control a free vehicle upon entering the play area.

Vehicles in LEGO `Rock Raiders' differ from buildings in the following ways;

Vehicles	Buildings
Created and sent down from the surface	Constructed on the cave floor
Vehicles can move over the majority of terrain undulations.	Buildings can only be constructed on flat cave floors.
Require mini-figure present before operative.	Does not require mini-figure as everything in buildings is automated and computer controlled
Enhancements done by replacing an unskilled mini-figure with a skilled one.	Enhancements done by purchasing extensions and upgrades.

Units: Small Vehicles

The following descriptions of these vehicles and their abilities are based upon our view of them at the present time. We are aware that their design is evolving and we will modify the game design to follow these changes. Again, value figures are representative and designed to show comparison and relationships between them and they are subject to change.

Small Hoverboard.

These are small fast craft capable of transporting a single mini-figure over all terrain types. They are very fragile, but cheap methods of quick transport.

	Unskilled	With Skilled
Cost	20	-
Speed	6	8
Ability (Mini-figure transport)	1	-
Power	Low	Low
Terrain Use	Land Only.	Land Only.

Small Digger.

This has two small chain saws on the front and can slowly drill through and excavate lighter rock types. It is relatively quick for a drilling vehicle and due to its lighter more agile frame, it can travel up steeper inclines faster than the other drilling vehicles.

	Unskilled	With Skilled
Cost	70	-
Speed	3	4
Ability (Drilling power)	2	4
Power	Low	Low
Terrain Use	Land Only	Land Only

The Rapid Rider

This is used for exploring areas of underground lakes or slower moving underground rivers. It can hold 1 mini-figure and has no cargo capability. Its great advantage is in exploring underground rivers to discover new caverns etc.

It is fairly fragile and is badly damaged by Rock monster attacks. Collisions with rock faces will also damage it greatly.

	Unskilled	With Skilled
Cost	160	-
Speed	6	8
Ability (Reconnaissance lights)	Medium visible distance	High visible distance
Power	Low	Low
Terrain Use	Water Only	Water Only

Small Transporter Truck

This stocky little unit has the capacity to carry 4 units, be they ore or crystals. It is very quick and is best used for speeding round grabbing freshly mined crystals and special small bonus items before `Rock Monsters' and `Scabby Scavengers' steal them.

	Unskilled	With Skilled
Cost	80	-
Speed	5	6
Ability (Capacity)	4 units	5 units
Power	Low	Low
Terrain Use	Land Only	Land Only

Small Helicopter.

This is a very fast airborne craft capable of transporting a minifigure over rubble and other obstacles such as lava etc. The rotor blades can tilt back and can be used to propel it forwards at high speed. A small storage capacity means this vehicle can be used to ferry small items back and forth over areas inaccessible by land-based vehicles.

Airborne craft are some of the most expensive vehicles in the game and this helicopter is no exception. It is very light and fragile and cannot withstand collisions with rock faces or sever damage caused by Rockmonsters etc.

	Unskilled	With Skilled
Cost	230	-
Speed	8	10
Ability 1 (Lighting) Ability 2 (Storage)	Low viewing distance. 1 item	Medium viewing distance. 1 item
Power	Low	Low
Terrain Use	Air and Land	Air and Land

Units: MediumSizedVehicles

The Loader-Dozer

This unit has three purposes in the LEGO `Rock Raiders' game. They are;

- **Clearing areas of rubble and debris**. These units will happily drive around recently excavated areas, clearing away the surplus rock and soil created by the digging and tunneling process. This allows other vehicles to move more efficiently over these areas.
- **It can hold up `Rock Monsters'** Bulldozers are not very large but are very strong and can withstand considerable physical punishment. Hence it takes many, many blows from a `Rock Monster' to damage it.

Bulldozers can go over a lot of terrain types, albeit fairly slowly. It has excellent grip due to the huge tyres and is very strong. It has no storage space for holding crystals.

	Unskilled	With Skilled
Cost	200	-
Speed	2	4
Ability (Barricade construction)	Very Slowly	Slow
Power	High	High
Terrain Use	Land Only	Land Only

The Granite Grinder

This is a powerful piece of digging apparatus that can climb over the majority of difficult land based areas due to its `Scout-Walker' like legs. The powerful turbines on the back of the Granite Grinder power the large drill on the front, enabling it to easily penetrate all but the hardest of rock, which it can drill into when it has a skilled driver mini-figure on-board, albeit very slowly.

It has no form of rock storage and can only carry one mini-figure at a time.

Due to its long legs, the `Granite Grinder' is also quite vulnerable to attack and can be knocked out of action by taking repeated blows from Rock Monsters.

	Unskilled	With Skilled
Cost	260	-
Speed	3	4
Ability (Drilling)	Loose/Medium Rock	Hard rock
Power	Medium	Medium
Terrain Use	Land Only	Land Only

Attack Catamaran.

This larger version of the small catamaran but has a very different function than that of the small one. This is a water based support vehicle equipped with semi-automatic teleporter guns. It has a much more powerful engine and is much heavier than its smaller cousin.

Rock monsters and other native inhabitants of this world can attack and harm the structure of the hull, but only when this vehicle is docked or close to the bank.

This vehicle is best used in the support of otherwise undefended `Large Hovercraft' and `Small Catamaran'

	Unskilled	**With Skilled**
Cost	600	-
Speed	4	5
Ability (Weapon)	semi-automatic `Teleporter' guns	-
Power	Medium	Medium
Terrain Use	Water Only	Water only

Units: Large Vehicles

Large Driller

This bore has a large drill on the front, big wheels for excellent traction and has a large storage capacity so can be used as both a drill and as a transporter. When instructed to excavate, it will do so. When idling, it will load crystals or ore foe transporting to the refinery or storage bay.

	Unskilled	With Skilled
Cost	450	-
Speed	1	2
Ability (Drilling)	Loose & Medium rock	Every strata type but impenetrable rock
Power	High	High
Terrain Use	Land Only	Land Only

Large Hovercraft.

This water based vehicle is essentially used for crossing faster flowing underground rivers where the smaller catamaran is not powerful enough to withstand the current.

Essentially it performs the same task in so much as it is a reconnaissance craft. Similarly to the small catamaran, it lights a large area in front of it and a medium sized area behind it.

The differences between the two are;
- **Price**. The Large Hovercraft is more expensive.
- **Horsepower**. Due to the large turbines on the rear of the Hovercraft, it can withstand currents that the small catamaran cannot.
- **Strength**. The Large Hovercraft can withstand much more damage than the small catamaran.
- **Speed.** Due to the lighter hull, the small catamaran can travel at a higher rate of knots than the Large Hovercraft.

`Rock Monsters' cannot reach it unless it is at the dock, where they will pound on it to see if there are any crystals in there. Other smaller creatures such as the `Scabby Scavengers' will attempt to leap onboard if they see one near the bank anywhere, with nothing on their mind but vandalism.

	Unskilled	With Skilled

Cost	300	-
Speed	1	2
Ability (Reconnaissance)	Medium distance visibility.	High distance visibility
Power	High	High
Terrain Use	Water Only	Water Only

Large Hovercraft + Transporter

Essentially this vehicle is the same as the large hovercraft, except it has a large storage bay on the rear. This has the capacity to transport mined crystals and ore, mini-figures and small vehicles, over water. In effect, it becomes a water based and larger variety of the land based truck.

It otherwise has the same capabilities and weaknesses as the normal large hovercraft and should the storage section be destroyed, its contents will be lost and the hovercraft itself will revert to being a normal one.

	Unskilled	With Skilled
Cost	500	-
Speed	1	2
Ability 1 (Recon.) Ability 2 (Capacity)	Med. distance visibility. 8 units	High distance visibility. 10 units
Power	High	High
Terrain Use	Water Only	Water Only

The Tunnel Transport

This large unit is used to transport mini-figures and up to medium sized vehicles in its underside hold. This can also be used to transport crystal and ore back to base.

It is very expensive, but will provide invaluable help to the player willing to take the risk of obtaining one, due to their ability to transport digging equipment over areas of water and lava, that they would not normally be able to cross.

`Rock Monsters' and other natural inhabitants of this subterranean world cannot harm the `Large Helicopter' vehicle unless it is on the ground.

	Unskilled	With Skilled
Cost	1000	-
Speed	3	5
Ability 1 (Capacity)	10 units	15 units.
Power	High	High
Terrain Use	Air and Land	Air and Land

Collecting Power Crystals

In `Rock Raiders' one of the main theme objectives is the collection and processing of energy crystals.

1. Smaller gems that are produced by the excavation purpose are collected automatically by mini-figures and trucks in the vacinity where, they will be transported back to the refinery.

- The crystals that a player has, will be displayed as a simple bar on the control panel which represents the overall power level of the base. The power consumption of the base is also displayed.

-

- Crystals are also used to produce each motorized unit (power), which is installed in the vehicles.

Collecting Ore

As well as crystals, the excavation and tunneling processes produce raw ore nuggets. When collected, these too are processed in the refinery and used.

Many of the principles behind ore are the same as with power crystals, in terms of the way they are collected, transported and processed. The differences are;

Crystals	Ore
Used for providing power for buildings and cave lighting.	Used for financing the creation of vehicles and hiring of mini-figures.
Can be used to `power-up' mini-figures and give them special abilities.	Cannot be used by mini-figures.
Will attract `Rock Monsters' who will then devour them.	Will attract any other natural inhabitant.
Requires `Crystal Store' building.	Requires `Ore Store' building.

Levels

Level Design

Initially they will be designed to introduce the player to the new vehicles from the `Rock Raiders' model range and the first of six play zones will be designed with tutorial in mind.

The initial level format will consist of;

1. START
2. HAZARD/OBJECTIVE PREVENTS PROGRESSION
3. USE NEW VEHICLE TO SOLVE PROBLEM OF HAZARD/OBJECTIVE
4. HAZARD PASSED/OBJECTIVE ACHEIVEMENT
5. REWARD (`LEGEND' CRYSTAL FRAGMENT, SECRET MAP etc.)

This will ensure that the player (who could be a prospective purchaser of the LEGO models themselves) will see all the vehicles available in the `Rock Raiders' LEGO System range. It introduces models gradually, teaches players the games features and of course the model features and familiarises them with the interface.

Levels will be designed with variety and reward in mind at all time. The game design is based around a resource management style and so the players usual prime concern is the collection of raw materials.

Action elements are introduced with the ability to manually control vehicles and the physical level designs will be with this in mind. Lots of rolling mounds and lumps will be in caves that will be fun to drive over and will be visually more stimulating than flat terrain as seen in games like `Diablo' and `Command and Conquer: Red Alert'.
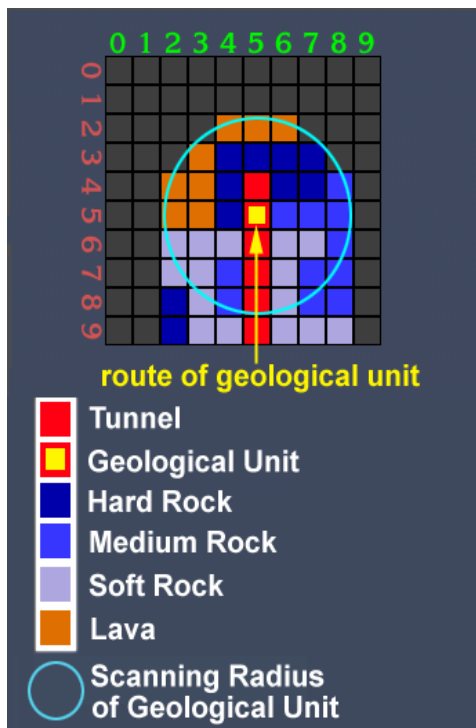
During the game, we propose to have a variety of level designs to keep the player amused and to avoid any idea of that the next level is merely a harder version of the previous one. Occasional puzzle and location elements will be introduced to break up gameplay and add variety.

These will consist of level briefs that give a specific objective. Examples of which will include ;

- **`Find-the-special'** levels, where the goal is to find a hidden artifact.

- **The collection of component parts** to build a particular LEGO model necessary to pass an obstacle.

- **`Find-the-exit'** levels.

- **`Don't wake the rock monster'** levels where the level is lost if a rock monster is disturbed from his slumber.

- Some levels will be **against the elements**, where a hazard will reach the players Rock Raider HQ in a certain time and the player then has that amount of time to complete the mission.

Each level will contain hidden rooms or caverns that can only be accessed by using a particular route. The players overall progress will not be halted if the secret areas are not found however in later levels it will be more difficult.

Elements will be introduced with respect to water, lava, and other such terrain, making hazards and obstacles that the player will have to think about before progress is achieved.

route of geological unit

Tunnel
Geological Unit
Hard Rock
Medium Rock
Soft Rock
Lava
Scanning Radius of Geological Unit

Navigation, Exploration And 'Cross-Section Polygon' Visibility Proposal

The geological survey of the area surrounding a tunnel would tell the player not only what type of strata exists, but also where dangerous lava pools and underground reservoirs lie in wait.

This would be beneficial for three main reasons:
- The player would utilize their geological units;
- They would be 'discovering' information about their surroundings;
- They would be able to plan their routes to avoid water or lava or find their quickest route to them!

For example, the player digs an exploratory tunnel and then the player sends a geologist mini-figure along that tunnel. The information he records is displayed on both the map and the cross-section polygons. This function would also be automatic; a geologist is keen to find out more about the planet and so would automatically head for new, unexplored areas of tunnel.

So how would this work?

In this example the players' tunnel is heading directly toward a pool of lava. Without utilizing their Geological Unit it would be possible to drill directly into it. This would cause havoc to both their units and to their tunnel system!

Other information that could be discovered would be power-crystal, gem, or ore deposits. As the player can also see the various rock densities they can choose to drill the softer rock so reaching them more quickly. Or if they are only equipped with dynamite they may choose to blast through hard rock to minimize cave-ins.

After Geological Survey

Hard Rock
Medium Rock
Soft Rock
Lava
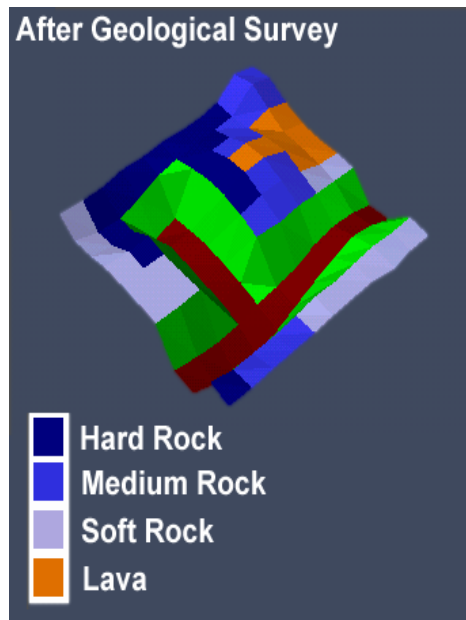
Geological Units

The first, and most obvious unit is the Geologist mini-figure. It would be his job to wander along the tunnels and discover what is going on around them. Generally, this would occur automatically as new tunnels are constructed.

As your mining operation grows you will have to hire more geologists to cope with the expanding network. Ideally the player will want to assign him to a small hover-board so that he can cover greater areas more quickly.

However, vehicles and mini-figures cost ore, so the player will have to consider their resources carefully. Spending all their ore on drilling equipment may seem to get them across a level more quickly, however there will undoubtedly be more accidents.

The player may also drill right past an invaluable crystal deposit, or spend too much time ploughing through very hard rock when a geological survey would have showed them a slightly longer but quicker route through soft rock.

Geological/Teleport Remote Unit

These static pieces of equipment are expensive and must be transported to its final location by a vehicle. However, they are an invaluable piece of equipment.

Once placed on the level they provide constantly updated information about tunnel locations, opponents progress, rock density, lava and water deposits. Their radius is far greater than that of a mini-figure and so makes up for the fact that they are static.

They also have another very important feature: **Teleportation**.
As discussed, the player should be able to 'pick up' units and quickly move them to another part of the level. If this function does not have any constraints then it would be possible for a player to simply overcome obstacles such as lava flows by picking the unit and 'dropping' it on the other side. Thus obstacles would be 'skipped' over.

If the player has to deposit a teleportation unit then it would follow that the vehicle dropping it would already have overcome the obstacle. Therefore the player would not be able to by-pass any puzzles that we incorporate into the gameplay.

The same would be the case for the larger caverns found in the level. To teleport a new mini-figure or vehicle to a newly discovered cavern, the player would first have to make their way to it and deposit a teleportation unit. In this way the player will have to first 'discover' an area rather than have free reign over the whole level. As they build up their forces and number of geological/teleportation units, they will still be able to teleport units from one side of the level to another, but they will have 'earned' that ability.

Finally, to avoid the units 'stacking up' the teleport unit will have an effective radius of say, 3 or 4 blocks so that the player will have less trouble 'dropping' the unit if there are other units in the vicinity. If the player decides to use the map to select a 'drop' point then the computer will automatically place them around the teleport unit.

How will this work in-game?

We propose that the player will be able to click on a mini-figure or vehicle and a pop-up menu will appear that would assign orders to that unit. One of these command icons would be teleport.

It would be frustrating to the player if they had to first send their craft or mini-figure to a teleport unit before scrolling across the screen to the location of yet another teleportation unit before re-deploying it. For this reason the 'pick-up and drop' process would occur in the following way:

1. Click on the unit anywhere on the level to display the pop-up icon bar;
2. Select 'teleport'; (the menu disappears and the unit teleports off the level);
3. The pointer displays the unit currently in your possession;
4. It would glow green if the unit is within the radius of a teleportation unit and red if it is not;
5. Either click again on the main game portal to deploy the unit OR click on one of the teleportation units that is displayed on the map. Again, to ensure that the player knows exactly when they are over one of these teleports, the pointer glows green or red.